

CLAIMS

What is claimed is:

1. A method for operating a directional antenna in a Wireless Local Area Network (WLAN), comprising:
 - 5 causing a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna; and based on the metrics, steering the directional antenna to a selected direction associated with an Access Point (AP).
- 10 2. The method according to claim 1 wherein causing the MAC layer to provide the metrics includes causing the MAC layer to determine the metrics as a function of received energy by the directional antenna in the beam angles.
- 15 3. The method according to claim 1 wherein causing the MAC layer to provide the metrics includes causing the MAC layer to transmit a signal to at least one access point and to measure a response from said at least one access point.
4. The method according to claim 1 wherein causing the MAC layer to provide the metrics includes receiving a table of previously calculated metrics from the MAC layer.
- 20 5. The method according to claim 1 wherein causing the MAC layer to provide the metrics includes causing the MAC layer to calculate the metrics as a function of a beacon signal.

6. The method according to claim 1 further including associating with a distribution system coupled to the access point.
7. The method according to claim 6 wherein causing the MAC layer to provide the metrics occurs before or after associating with the distribution system.
- 5 8. The method according to claim 1 further including coordinating the beam angle of the directional antenna with causing the MAC layer to provide the metrics.
9. The method according to claim 1 wherein the beam angle includes an omnidirectional beam angle.
10. The method according to claim 1 wherein the metrics correspond to beam angles relative to one access point.
11. The method according to claim 1 wherein the metrics correspond to beam angles relative to multiple access points.
12. The method according to claim 1 wherein the metrics includes at least one of the following: Signal-To-Noise Ratio (SNR), Energy-per-bit per total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-Interference Ratio (C/I).
- 15 13. The method according to claim 1 used in an 802.11, 802.11a, 802.11b, or 802.11g network.

14. An apparatus for operating a directional antenna in a Wireless Local Area Network (WLAN), comprising:
 - 5 a Station Management Entity (SME) that causes a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna; and an antenna control unit coupled to the directional antenna that receives input based on the metrics from the SME and, in turn, causes the directional antenna to steer an antenna beam to a selected direction associated direction associated with an Access Point (AP).
- 10 15. The apparatus according to claim 14 wherein the SME causes the MAC layer to determine the metrics as a function of received energy by the directional antenna in the beam angles.
- 15 16. The apparatus according to claim 14 wherein the SME causes the MAC layer to transmit a signal to the access point and to measure a response from the access point.
17. The apparatus according to claim 14 further including a table of previously calculated metrics, wherein the table is provided from the MAC layer to the SME.
18. The apparatus according to claim 14 wherein the SME causes the MAC layer to calculate the metrics as a function of a beacon signal.
- 20 19. The apparatus according to claim 14 wherein the SME associates with a distribution system coupled to the AP.

20. The apparatus according to claim 19 wherein the SME causes the MAC layer to provide the metrics before or after associating with the distribution system.
21. The apparatus according to claim 14 wherein the SME coordinates the beam angle of the directional antenna with causing the MAC layer to provide the metrics.
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22. The apparatus according to claim 14 wherein the SME causes the directional antenna to operate in an omni-directional beam angle mode.
23. The apparatus according to claim 14 wherein the metrics correspond to beam angles relative to one access point.
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24. The apparatus according to claim 14 wherein the metrics correspond to beam angles relative to multiple access points.
25. The apparatus according to claim 14 wherein the metrics include at least one of the following: Signal-to-Noise Ratio (SNR), Energy-per-Bit per Total Noise (Eb/No), Received Signal Strength Indication (RSSI), and Carrier-to-
15 Interference Ratio (C/I).
26. The apparatus according to claim 14 used in an 802.11, 802.11a, 802.11b, or 802.11g network.
27. An apparatus for operating a directional antenna in a Wireless Local Area Network (WLAN), comprising:
20 means for causing a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna; and

means for steering the directional antenna based on the metrics to a selected direction associated with an Access Point (AP).